1.   (currently amended) A method for driving a solid state image sensor that provides image signals in display image units, wherein the solid state image sensor includes a semiconductor substrate, a semiconductor layer formed on the semiconductor substrate and having an opposite conductivity to the semiconductor substrate, the semiconductor layer having a plurality of parallel channel regions arranged therein, and a plurality of transfer electrodes arranged on the semiconductor substrate each intersecting the plurality of channel regions, wherein each of the channel regions generates and accumulates information charges, the driving method comprising the steps of:

storing information charges in the channel region that correspond to a transfer electrode selected by selectively activating the plurality of transfer electrodes at a predetermined timing during a vertical scanning period;

transferring the stored information charges to a transfer register;

deactivating the plurality of transfer electrodes;

discharging, after said deactivating operation, the information charges in the channel regions toward the semiconductor substrate by keeping the plurality of transfer electrodes deactivated and increasing the potential at the semiconductor substrate; and

repetitively executing the storing, transferring, deactivating, and discharging steps to continuously obtain the image signals in display image units.

2.   (previously presented) The driving method according to claim 1, wherein the potential at the semiconductor substrate is raised just before the next storing step.

3.   (previously presented) The driving method according to claim 1, wherein a potential well having a predetermined depth is formed in the selected channel region during the storing step to store the information charges.

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4.   (previously presented) The driving method according to claim 3, wherein the potential well is prevented from being formed in the discharging step.

5.   (previously presented) An apparatus for driving a solid state image sensor that provides image signals in display image units, wherein the solid state image sensor includes a semiconductor substrate, a semiconductor layer formed on the semiconductor substrate and having an opposite conductivity to the semiconductor substrate, the semiconductor layer having a plurality of parallel channel regions arranged therein, and a plurality of transfer electrodes arranged on the semiconductor substrate each intersecting the plurality of channel regions, wherein each of the channel regions generates and accumulates information charges, the driving apparatus comprising:

a timing controller for generating a predetermined timing signal based on a reference clock signal; and

a clock generator for generating a vertical clock signal and a substrate clock signal based on the timing signal and applying the vertical clock signal and the substrate clock signal to the solid state image sensor, wherein the clock generator activates the vertical clock signal so that the transfer electrodes are selectively activated and the information charges are accumulated in the channel regions corresponding to the activated transfer electrode, deactivates the vertical clock signal so that the transfer electrodes are maintained in a deactivation state after transferring the stored information charges, and then activates the substrate clock signal so that the potential of the semiconductor substrate is increased and the information charges in the channel region are discharged while keeping the plurality of transfer electrodes deactivated.

6.   (previously presented) The driving apparatus according to claim 5, wherein the clock generator activates the substrate clock signal to raise the potential at the semiconductor substrate except when the information charges are stored.

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7.   (previously presented) The driving apparatus according to claim 5, wherein the clock generator keeps the substrate clock signal deactivated to keep the plurality of transfer electrodes deactivated except when the information charges are stored.

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